

Article

Psychological Stressors Predicting Increased Drinking During the COVID-19 Crisis: A Longitudinal National Survey Study of Workers in Finland

Atte Oksanen*, Iina Savolainen, Nina Savela, and Reetta Oksa

Faculty of Social Sciences, Tampere University, Tampere, Finland

*Corresponding author: Professor of Social Psychology, Tampere University, Kalevantie 5, 33100 Tampere, Finland. Tel.: +358503187279; Fax: +358 3 215 9012; E-mail: atte.oksanen@tuni.fi

Received 29 August 2020; Revised 10 October 2020; Editorial Decision 17 October 2020; Accepted 17 October 2020

Abstract

Aims: The global crisis caused by the outbreak of a novel coronavirus rapidly increased working remotely in many countries. The aim of this study was to analyze psychological stressors predicting increased drinking during the COVID-19 crisis. Also, individual and socio-demographic differences were analyzed.

Methods: A nationally representative sample of Finnish workers ($N = 1308$) was collected before the crisis in September–October 2019 and 82.02% of them responded to a follow-up survey conducted in March–April 2020. Increased drinking was the outcome variable and it was measured with the AUDIT-C before and during the COVID-19 crisis. Predictors measured before the crisis included cyberbullying victimization at work, psychological distress, burnout and work climate. Additional measures included personality factors, socio-demographic factors and occupational information.

Results: One-fourth of Finnish workers (25.37%) reported increased drinking during the COVID-19 crisis. Cyberbullying victimization at work and psychological distress before the crisis predicted increased drinking during the crisis. Conscientious workers and those working in educational and health and welfare sectors were less likely to increase drinking, while increased drinking was most common among workers under 30 years of age.

Conclusions: Psychological stressors are risk factors for increased drinking in unusual times such as the COVID-19 crisis. Cyberbullying victimization at work and psychological distress were found as major risk factors. The results suggest that preventive work should be done at workplaces. This is particularly important if alcohol consumption is used as a means of coping during a stressful time.

INTRODUCTION

The outbreak of a novel coronavirus (SARS-CoV-2) and coronavirus disease (COVID-19) has changed working conditions for many due to social-distancing policies that were placed within many European countries in March (2020). The crisis became a massive natural experiment for remote work in particular. Eurofound reported a major increase in remote work during March–April 2020. In Finland, for example, 60% of workers switched to working remotely, representing

the highest proportion of remote workers in Europe due to the COVID-19 crisis (Eurofund, 2020).

Switching to remote work and social isolation due to a crisis inevitably changed people's daily habits and routines, and they may have consequences on some leisure activities as well. Hazardous drinking (i.e. problematic alcohol use in terms of excessive number of portions or frequency) is one potential consequence, and a surge in alcohol sales was observed in the beginning of the pandemic in

many countries (Chick, 2020; Da *et al.*, 2020). Researchers have warned about the extensive harms of increased hazardous drinking and the World Health Organization even encouraged governments to restrict alcohol access during the pandemic in an effort to limit alcohol consumption (Clay and Parker, 2020; Lange *et al.*, 2020; Neufeld *et al.*, 2020; World Health Organization, 2020).

Hazardous drinking has numerous negative health effects, including increased risk for diseases such as cardiovascular disease, cancer and type 2 diabetes (Klatsky, 2010; Pelucchi *et al.*, 2011; Knott *et al.*, 2015; Connor, 2017). Hazardous drinking is also a concern for mental health, as previous studies have indicated that increased alcohol consumption is associated with depression, anxiety disorders as well as lower life satisfaction (Boschloo *et al.*, 2012; Keyes *et al.*, 2019; McHugh and Weiss, 2019; Sæther *et al.*, 2019).

So far, research evidence on alcohol use during the ongoing COVID-19 crisis is limited. Little is known, in particular, how the crisis may have impacted drinking habits of adult workers, while some studies exploring the overall impact of the crisis on alcohol consumption have emerged. A study conducted in China, mainly in the Hubei province where the COVID-19 pandemic started, showed an 11% increase in hazardous drinking in conjunction with elevated anxiety, depression and lower mental well-being (Ahmed *et al.*, 2020). According to a German population-based study, nearly 35% reported drinking more or much more, while 19% of the general population consumed less alcohol during lockdown (Koopmann *et al.*, 2020). In a sample of Canadians, 18% reported an increase and 12% a decrease in alcohol consumption, but majority, 70%, reported no change in their drinking habits (NANOS Research, 2020). Among a sample of Polish adults, drinking increased by 14% and decreased by 16%. Increase in consumption was more likely among those individuals who had heavier drinking habits prior to the COVID-19 pandemic, weaker coping skills and depression (Chodkiewicz *et al.*, 2020). Pre-pandemic drinking, along with depression and stress, was also associated with heavier drinking during the crisis among Australians (Neill *et al.*, 2020). A study examining the effect of COVID-19-related campus closure on American university students found that symptoms of depression and anxiety were associated with increased alcohol consumption following the announcement of university closing due to the pandemic (Lechner *et al.*, 2020).

It is likely that some people faced more challenges in the beginning of the crisis. The sudden restrictions and quarantine orders might have forced people to re-structure their everyday life and quickly adapt to a new set of rules and standards. These can be stressful tasks for many and, on top of the uncertainty brought by the public health crisis itself, increase psychological distress. It is possible that the added challenge of quarantine and nation-wide restrictions led to increased alcohol use during the pandemic as a way to relax, self-medicate or alleviate stress (Rehm *et al.*, 2020; Rodriguez *et al.*, 2020). Indeed, quarantine has been associated with negative psychological consequences, such as stress, post-traumatic stress symptoms, anxiety and disrupted sleep (Wu *et al.*, 2009; Brooks *et al.*, 2020; Husky *et al.*, 2020; Rajkumar, 2020).

Under non-crisis situations, alcohol use has been linked to psychological risk-factors at work such as distress (Choi and DiNitto, 2011), burnout, (Jackson *et al.*, 2016; Pedersen *et al.*, 2016; Park *et al.*, 2020) and workplace bullying (Richman *et al.*, 1999; Vartia, 2001; Rospenda *et al.*, 2009; Bartlett and Bartlett, 2011; Nielsen *et al.*, 2018). For some workers, being socially isolated from supportive others and increased remote work during the pandemic may have accentuated the negative experiences of working and communicating with colleagues online. Cyberbullying victimization at work, for

example, has become more commonplace in the digital age and considered to have potential negative impacts on well-being (Farley *et al.*, 2015; Snyman and Loh, 2015; Kowalski *et al.*, 2018; Oksanen, Oksa *et al.*, 2020). Cyberbullying victims as well as those who are heavily burdened by their work or personal life might have had a worse starting point when first faced with the COVID-19 crisis.

Certain individual and socio-demographic factors are also potentially associated with increased hazardous drinking. Under normal circumstances, hazardous drinking is most common among young people (Adan *et al.*, 2017; Foster and Canfield, 2017; World Health Organization, 2018) and men, but the gap between men and women has decreased over the years (Slade *et al.*, 2016). Binge drinking has also been associated with neuroticism and extroversion, but most consistently with low conscientiousness (Friedman *et al.*, 1995; Kubicka *et al.*, 2001; Clark *et al.*, 2012; Adan *et al.*, 2017). Although there are some indications that personality factors impact how people behave during the COVID-19 crisis (Zajenkowski *et al.*, 2020), it is still unclear what role personality factors play in hazardous drinking during the crisis. Other socio-demographic factors potentially impacting increased hazardous drinking include occupational field, as there are major differences in how different occupational fields responded to and have coped with the crisis.

This study analyzed increased drinking during the COVID-19 crisis in Finland. Finland reacted to the crisis fast and recommendations for remote work and cancellation of large public events were issued on 13 March 2020 (Oksanen, Kaakinen *et al.*, 2020). National state of emergency was declared, starting on 16 March, and it was followed by the closure of bars and nightclubs. Restaurants were only allowed to sell food and low-alcohol beverages such as beer to-go. Alcohol home delivery is not permitted in Finland, but monopoly stores and supermarkets were open normally.

Research questions were: (i) Do pre-COVID-19 crisis mental health risks (cyberbullying victimization at work, burnout and psychological distress) predict increased drinking during the COVID-19 crisis? (ii) Are individual and socio-demographic differences associated with increased drinking during the COVID-19 crisis?

MATERIALS AND METHODS

Participants

Participants of the study took part in the longitudinal *Social Media at Work in Finland* Survey. The study was designed as a representative survey of Finnish workers and it was targeted at Finnish employees. Data collection was conducted in collaboration with a data solutions provider Norstat whose online research panel was used to recruit participants. The sample does not have any major bias in comparison to official census figures of workers in Finland. The sample includes participants from all regions of mainland Finland and from all major occupational areas (Oksa *et al.*, 2020; Oksanen, Oksa *et al.*, 2020b).

A pre-COVID-19 crisis survey was collected between 16 September and 15 October 2019 (Time point 1, T1). The participants ($N = 1308$) were re-contacted during the COVID-19 crisis and 82.65% of them responded to the follow-up survey ($N = 1081$) between 16 March and 9 April 2020 (Time point 2, T2). Analysis included those participants who completed all the measures used in this study ($n = 1042$). The participants were 48.22% female and aged 19–65 during the first survey (Mean [M] = 43.07; Standard deviation [SD] = 12.67). There was no bias due to nonresponse, and population weights were used to correct minor biases in age and gender in the sample.

Table 1. Descriptive statistics of study variables

Categorical variables	<i>n</i>	% <i>M</i>		
Increased drinking during the COVID-19 crisis	264	25.37		
Decreased drinking during the COVID-19 crisis	277	26.62		
No change in drinking during the COVID-19 crisis	500	48.02		
Cyberbullying at work victim	84	8.07		
Female	502	48.22		
Age				
18–29	204	19.61		
30–45	359	34.46		
46–65	479	45.93		
Education				
Primary/secondary degree	569	54.63		
University of applied science degree	232	22.26		
University degree	241	23.11		
Married or in close relationship	651	62.51		
Children ages 0–17 at home	306	29.32		
Remote work at least 2 days/week	84	8.09		
Managerial position	198	19.02		
Occupational area				
Industrial sector	295	28.27		
Service	194	18.57		
Business, communication and technology	152	14.62		
Public administration	76	7.29		
Education	97	9.28		
Health and welfare	157	15.05		
Unknown	72	6.91		
Continuous variables	Range	<i>M</i>	<i>SD</i>	α
Psychological distress	0–36	12.25	5.74	0.91
Burnout	2–96	37.05	16.38	0.89
Work climate	4–20	14.62	2.87	0.75
Openness	3–21	14.62	3.28	0.68
Conscientiousness	3–21	15.67	3.04	0.67
Extroversion	3–21	13.40	4.34	0.87
Agreeableness	3–21	14.55	3.01	0.55
Neuroticism	3–21	11.94	3.76	0.73

effects by controlling only for age and gender. Full models include all target variables. Tables report odds ratios (ORs) and their standard errors (SEs), statistical significance (*P*) and average marginal effects (AMEs), which provide us with reliable, comparable and easily understandable predictions from the model, while taking into account other independent variables (Mood, 2020). For example, AME of 0.255 means that a one-unit increase in the independent variable increases the likelihood of outcome by 25.5%.

RESULTS

Results based on comparison of AUDIT-C scores before and during COVID-19 crisis showed that 25.37% of Finnish employees had increased drinking, 48.02% showed no change and 26.62% had decreased drinking (Table 1). The mean comparison between T1 (before COVID-19 crisis) and T2 (during COVID-19-crisis) showed no statistically significant change in AUDIT-C scores within the whole population (*M*, T1 = 3.71, *SD* = 0.74, *M*, T2 = 3.69; *SD* = 0.75, *t*-test, *P* = 0.852). Those reporting an increase in drinking had higher AUDIT-C scores than those who did not report an increase (*M* = 4.97, *SD* = 2.35 vs. *M* = 3.26, *SD* = 2.29, *t*-test, *P* < 0.001). More than half

(53.37%) of those who increased their drinking during the COVID-19 crisis were hazardous drinkers (AUDIT-C \geq 5).

Logistic regression models focused on increased drinking at T2 (see Table 2). Models 0 first show age- and gender-adjusted effects. Cyberbullying victimization at work (AME 0.159; 95% CI: 0.037, 0.282) and psychological distress (AME 0.007; 95% CI: 0.002, 0.011) predicted increased drinking. This means, to demonstrate, that among cyberbullying victims, increased drinking was 15.94% higher than among non-victims. The likelihood of cyberbullying victims to increase drinking was 39.99% compared with 24.06% of non-victims. Also, we found that conscientiousness predicted lower likelihood of increased drinking (AME -0.013 ; 95% CI: -0.022 , -0.003), meaning that a one-point increase on a scale from 3 to 21 in conscientiousness decreased the likelihood of increased drinking by 1.3%. Of socio-demographic factors, age and occupational field predicted increased drinking. Increased drinking was most common among under 30-year-old workers. Notable differences were also shown in occupational fields. For example, 31.32% of business, communication and technology sector and 30.41% of public administration workers reported increased drinking, while only 14.55% in educational sector and 21.08% in health and welfare sector did so.

Table 2. Logistic regression models predicting increased drinking during the COVID-19 crisis

	Models 0				Full model			
	OR	SE	P	AME	OR	SE	P	AME
Cyberbullying at work victim	2.12	0.57	0.005	0.159	2.03	0.61	0.019	0.143
Psychological distress	1.04	0.01	0.007	0.007	1.05	0.02	0.015	0.008
Burnout	1.00	0.00	0.644	0.000	0.99	0.01	0.154	-0.002
Work climate	1.01	0.03	0.675	0.002	1.06	0.03	0.096	0.010
Openness	1.00	0.02	0.978	0.000	1.01	0.02	0.593	0.002
Conscientiousness	0.93	0.02	0.010	-0.013	0.94	0.03	0.034	-0.011
Extroversion	0.98	0.02	0.192	-0.004	0.98	0.02	0.371	-0.003
Agreeableness	0.96	0.03	0.138	-0.007	0.98	0.03	0.617	-0.003
Neuroticism	1.03	0.02	0.265	0.005	1.00	0.03	0.966	0.000
Female	0.84	0.13	0.272	-0.032	0.91	0.17	0.594	-0.018
Age (ref. under 30)								
30–45	0.52	0.12	0.007	-0.128	0.50	0.12	0.004	-0.128
46–65	0.63	0.15	0.050	-0.094	0.72	0.17	0.161	-0.064
Education (ref. primary/secondary)								
University of applied sci. degree	0.95	0.19	0.782	-0.010	0.98	0.20	0.912	-0.004
University degree	0.87	0.17	0.468	-0.026	0.93	0.19	0.716	-0.013
Married or in a close relationship	0.91	0.15	0.569	-0.017	0.93	0.16	0.674	-0.013
Children ages 0–17 at home	1.30	0.22	0.123	0.049	1.27	0.23	0.187	0.043
Remote work at least 2 days/week	1.39	0.34	0.178	0.061	1.22	0.32	0.448	0.037
Managerial position	0.99	0.19	0.979	-0.001	0.94	0.20	0.758	-0.012
Occupational area (ref. education)								
Industrial sector	1.92	0.65	0.052	0.100	2.06	0.73	0.043	0.108
Service	2.22	0.78	0.022	0.128	2.32	0.84	0.020	0.129
Business, communic. and techn.	2.70	0.96	0.005	0.168	2.75	1.00	0.006	0.163
Public administration	2.59	1.03	0.017	0.159	2.53	1.02	0.022	0.146
Health and welfare	1.57	0.58	0.218	0.065	1.72	0.65	0.151	0.077
Unknown	2.37	1.02	0.044	0.141	2.40	1.08	0.052	0.136

The full model, including all the variables in the model, did not change the main line of the results: cyberbullying victimization at work (AME 0.143; 95% CI: 0.012, 0.273) and psychological distress (AME 0.008; 95% CI: 0.002, 0.015) predicted increased drinking. Burnout and work climate were not statistically significant. The effect of conscientiousness remained statistically significant (AME -0.011; 95% CI: -0.021, -0.001), but other personality traits were not associated with increased drinking. Of sociodemographic controls, younger age and occupational field differences remained statistically significant. For example, 30–45 year olds were less likely to increase drinking compared with those under 30 years of age (AME -0.128; 95% CI: -0.219, -0.036). Regarding occupational fields, there were no statistically significant differences between educational sector and health and welfare sector, but other fields reported higher likelihood for increased drinking than educational sector and health and welfare sector.

DISCUSSION

Principal results

This study investigated increased drinking of workers during the COVID-19 crisis in Finland during Spring 2020. About one-fourth of Finnish workers reported increased drinking, one-fourth decreased drinking and, within half of the participants, the situation had

remained the same. More than half of those whose drinking increased were hazardous drinkers. Our study focused on factors explaining the increase in drinking during the crisis. Cyberbullying victimization at work and psychological distress before the crisis predicted increased drinking. However, burnout was not related to increased drinking.

Conscientious individuals were less likely to report increased drinking. No connection was found among other personality traits (extroversion, neuroticism, openness and agreeableness). We also found that increased drinking was most common among younger workers aged 18–29 and those working in business, communication and technology sector and in public administration. Workers in educational and health and welfare sectors were less likely to report increased drinking compared with workers in other fields.

Limitations

Our study was limited to Finland and it only concerned the working population. It would be important to investigate increased drinking during the COVID-19 crisis cross-nationally. The results are also limited to the beginning of the crisis. Our data collection period however was the deepest point of the crisis in Finland so far. Nevertheless, it is equally important to estimate the change in drinking over the time as the crisis prolongs. The study is also limited to self-reported information on drinking and it is possible that some individuals misreport their usage of alcohol.

Comparison with prior work

Studies in various countries, e.g. Canadian, German, Greek and Polish studies, showed both increases and decreases in alcohol consumption (Koopmann *et al.*, 2020; NANOS Research, 2020; Panagiotidis *et al.*, 2020; Chodkiewicz *et al.*, 2020). The COVID-19 crisis has had a significant impact on social circumstances in which alcohol is typically consumed. In addition to restricting people's ability to hold gatherings and cancellation of large events, the availability of alcohol became limited due to the closure of bars and restaurants (Neufeld *et al.*, 2020; Oksanen, Kaakinen *et al.*, 2020).

Our finding that it was previous hazardous drinkers who tended to increase their drinking further is particularly important because heavy drinkers are more likely to become ill if they contract the coronavirus (Testino, 2020).

Our findings support prior studies which have indicated that cyberbullying victimization at work can have negative consequences on employee well-being (Farley *et al.*, 2015; Snyman and Loh, 2015; Kowalski *et al.*, 2018; Oksanen, Oksa *et al.*, 2020). Our analysis demonstrated that victims of cyberbullying at work had about 15% higher likelihood for increased drinking compared with non-victims. This implies that cyberbullying victimization is a major risk factor for heavier alcohol use, thus posing a further serious risk for employee well-being during the crisis. Therefore, organizations need to take actions such as establish clear procedures and systems to report and tackle cyberbullying, educate and support employees, and develop an anti-bullying organization culture.

Our findings also indicated that psychological distress predicted increased drinking during the COVID-19 crisis. Some prior studies have also associated alcohol use with psychological distress during the COVID-19 crisis (Ahmed *et al.*, 2020; Chodkiewicz *et al.*, 2020; Lechner *et al.*, 2020; Neill *et al.*, 2020). Moreover, prior research on drinking in non-crisis situations has made this link (Choi and DiNitto, 2011; Park *et al.*, 2020). In our study, however, burnout did not predict increased drinking, although the link between burnout and alcohol consumption has been established before (Jackson *et al.*, 2016; Pedersen *et al.*, 2016). Future studies should continue investigating the role of burnout during the prolonged crisis.

We additionally found that conscientious people had a lower likelihood for increased drinking. This finding is not surprising per se, as low conscientiousness has been generally associated with heavy drinking (Stewart *et al.*, 2001; Kuntsche *et al.*, 2006). In addition, we found that younger workers increased their drinking more than others. Occupational field differences were also major predictors, which reflect the situational factors people have had during the crisis. Considering, it is a rather positive finding that essential workers in health and welfare sectors were less likely to report increased drinking.

CONCLUSIONS

Our findings indicate a need to pay attention to alcohol use habits during crisis situations. Pre-crisis negative experiences and feelings were risks for increased drinking during the COVID-19 crisis in Spring 2020. In particular, our results underline the role of cyberbullying at work, which has long-lasting negative effects on individuals. Furthermore, psychological distress predicted increased drinking. Results suggest that preventive work should be done already at the workplaces. Employers and organizations should screen for cyberbullying and psychological distress and provide support for individuals facing these risks. This is particularly important if alcohol

consumption is used as a means of coping during a stressful time, as increased alcohol drinking for the purpose of coping may persist even after the stressor is gone (Keyes *et al.*, 2011), increasing health risks and societal burden of alcohol use.

FUNDING

This research has received funding from the Finnish Work Environment Fund (Professional Social Media Use and Work Engagement Among Young Adults Project, project number 118055, principle investigator: Atte Oksanen).

CONFLICTS OF INTEREST STATEMENT

None declared.

REFERENCES

- Adan A, Forero DA, Navarro JF. (2017) Personality traits related to binge drinking: A systematic review. *Front Psych* 8:134. doi: 10.3389/fpsy.2017.00134.
- Ahmed MZ, Ahmed O, Aibao Z, *et al.* (2020) Epidemic of COVID-19 in China and associated psychological problems. *Asian J Psychiatr* 51:102092. doi: 10.1016/j.ajp.2020.102092.
- Babor TF, Higgins-Biddle JC, Saunders JB, *et al.* (2001) *The Alcohol Use Disorders Identification Test. Guidelines for Use in Primary Care*, 2nd edn. Geneva:WHO.
- Banks MH, Clegg CW, Jackson PR, *et al.* (1980) The use of the general health questionnaire as an indicator of mental health in occupational studies. *J Occup Psychol* 53:187–94. doi: 10.1111/j.2044-8325.1980.tb00024.x.
- Bartlett JE, Bartlett ME. (2011) Workplace bullying: An integrative literature review. *Adv Dev Hum Resour* 13:69–84. doi: 10.1177/1523422311410651.
- Boschloo L, Vogelzangs N, van den Brink W, *et al.* (2012) Alcohol use disorders and the course of depressive and anxiety disorders. *Br J Psychiatry* 200:476–84. doi: 10.1192/bjp.bp.111.097550.
- Brooks SK, Webster RK, Smith LE, *et al.* (2020) The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *Lancet* 395:912–20. doi: 10.1016/S0140-6736(20)30460-8.
- Chick J. (2020) Alcohol and COVID-19. *Alcohol Alcohol* 55:341–2. doi: 10.1093/alcalc/aga039.
- Chodkiewicz J, Talarowska M, Miniszewska J, *et al.* (2020) Alcohol consumption reported during the COVID-19 pandemic: The initial stage. *Int J Environ Res Public Health* 17:4677. doi: 10.3390/ijerph17134677.
- Choi NG, DiNitto DM. (2011) Psychological distress, binge/heavy drinking, and gender differences among older adults. *Am J Addict* 20:420–8. doi: 10.1111/j.1521-0391.2011.00149.x.
- Clay JM, Parker MO. (2020) Alcohol use and misuse during the COVID-19 pandemic: Potential health crisis. *Lancet Public Health* 5:e259. doi: 10.1016/S2468-2667(20)30088-8.
- Clark A, Tran C, Weiss A, *et al.* (2012) Personality and alcohol metacognitions as predictors of weekly levels of alcohol use in binge drinking university students. *Addict Behav* 37:537–40. doi: 10.1016/j.addbeh.2011.11.035.
- Cobb-Clark DA, Schurer S. (2012) The stability of big-five personality traits. *Econ Lett* 115:11–5. doi: 10.1016/j.econlet.2011.11.015.
- Connor J. (2017) Alcohol consumption as a cause of cancer. *Addiction* 112:222–8. doi: 10.1111/add.13477.
- Da BL, Im GY, Schiano TD. (2020) COVID-19 hangover: A rising tide of alcohol use disorder and alcohol-associated liver disease. *Hepatology* 72:3, 11-02-108. doi: 10.1002/hep.31307.
- Eurofound. (2020) Living, Working and COVID-19: First Findings – April 2020. https://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef20058en.pdf (17 June 2020, date last accessed).
- Farley S, Coyne I, Sprigg C, *et al.* (2015) Exploring the impact of workplace cyberbullying on trainee doctors. *Med Educ* 49:436–43. doi: 10.1111/medu.12666.

- Fat LN, Bell S, Britton A. (2020) A life-time of hazardous drinking and harm to health among older adults: Findings from the Whitehall II prospective cohort study. *Addiction* 115:1855–66. doi: [10.1111/add.15013](https://doi.org/10.1111/add.15013).
- Forssell R. (2016) Exploring cyberbullying and face-to-face bullying in working life—prevalence, targets and expressions. *Comput Hum Behav* 58:454–60. doi: [10.1016/j.chb.2016.01.003](https://doi.org/10.1016/j.chb.2016.01.003).
- Foster J, Canfield M. (2017) Predictors of hazardous drinking among home drinkers. *J Subst Use* 22:637–42. doi: [10.1080/14659891.2017.1296040](https://doi.org/10.1080/14659891.2017.1296040).
- Friedman HS, Tucker JS, Schwartz JE, et al. (1995) Childhood conscientiousness and longevity: Health behaviors and cause of death. *J Pers Soc Psychol* 68:696–703. doi: [10.1037/0022-3514.68.4.696](https://doi.org/10.1037/0022-3514.68.4.696).
- Goldberg DP, Gater R, Sartorius N, et al. (1997) The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychol Med* 27:191–7. doi: [10.1017/s0033291796004242](https://doi.org/10.1017/s0033291796004242).
- Goldberg DP, Hillier VF. (1979) A scaled version of the general health questionnaire. *Psychol Med* 9:139–45. doi: [10.1017/s0033291700021644](https://doi.org/10.1017/s0033291700021644).
- Hahn E, Gottschling J, Spinath FM. (2012) Short measurements of personality—validity and reliability of the GSOEP big five inventory (BFI-S). *J Res Pers* 46:355–9. doi: [10.1016/j.jrp.2012.03.008](https://doi.org/10.1016/j.jrp.2012.03.008).
- Higgins-Biddle JC, Babor TF. (2018) A review of the alcohol use disorders identification test (AUDIT), AUDIT-C, and USAUDIT for screening in the United States: Past issues and future directions. *Am J Drug Alcohol Abuse* 44:578–86. doi: [10.1080/00952990.2018.1456545](https://doi.org/10.1080/00952990.2018.1456545).
- Husky MM, Kovess-Masfety V, Swendsen JD. (2020) Stress and anxiety among university students in France during COVID-19 mandatory confinement. *Compr Psychiatry* 102:152191. doi: [10.1016/j.comppsych.2020.152191](https://doi.org/10.1016/j.comppsych.2020.152191).
- Jackson ER, Shanafelt TD, Hasan O, et al. (2016) Burnout and alcohol abuse/dependence among U.S. medical students. *Acad Med* 91:1251–6. doi: [10.1097/ACM.0000000000001138](https://doi.org/10.1097/ACM.0000000000001138).
- Kaarne T, Aalto M, Kuokkanen M, et al. (2010) AUDIT-C, AUDIT-3 and AUDIT-QF in screening risky drinking among Finnish occupational health-care patients. *Drug Alcohol Rev* 29:563–7. doi: [10.1111/j.1465-3362.2010.00172.x](https://doi.org/10.1111/j.1465-3362.2010.00172.x).
- Kalliath TJ, O'Driscoll MP, Brough P. (2004) A confirmatory factor analysis of the general health Questionnaire-12. *Stress Health* 20:11–20. doi: [10.1002/smi.993](https://doi.org/10.1002/smi.993).
- Keyes KM, Allel K, Staudinger UM, et al. (2019) Alcohol consumption predicts incidence of depressive episodes across 10 years among older adults in 19 countries. *Int Rev Neurobiol* 148:1–38. doi: [10.1016/bs.irn.2019.09.001](https://doi.org/10.1016/bs.irn.2019.09.001).
- Keyes KM, Hatzenbuehler ML, Hasin DS. (2011) Stressful life experiences, alcohol consumption, and alcohol use disorders: The epidemiologic evidence for four main types of stressors. *Psychopharmacology* 218:1–17. doi: [10.1007/s00213-011-2236-1](https://doi.org/10.1007/s00213-011-2236-1).
- Klatsky AL. (2010) Alcohol and cardiovascular health. *Physiol Behav* 100:76–81. doi: [10.1016/j.physbeh.2009.12.019](https://doi.org/10.1016/j.physbeh.2009.12.019).
- Knott C, Bell S, Britton A. (2015) Alcohol consumption and the risk of type 2 diabetes: A systematic review and dose-response meta-analysis of more than 1.9 million individuals from 38 observational studies. *Diabetes Care* 38:1804–12. doi: [10.2337/dc15-0710](https://doi.org/10.2337/dc15-0710).
- Koopmann A, Ekaterini G, Falk K, et al. (2020) Did the general population in Germany drink more alcohol during the COVID-19 pandemic lockdown. *Alcohol Alcohol* 55:698–9. doi: [10.1093/alcalc/aga058](https://doi.org/10.1093/alcalc/aga058).
- Kowalski RM, Toth A, Morgan M. (2018) Bullying and cyberbullying in adulthood and the workplace. *J Soc Psychol* 158:64–81. doi: [10.1080/00224545.2017.1302402](https://doi.org/10.1080/00224545.2017.1302402).
- Kubicka L, Matejcek Z, Dytrych Z, et al. (2001) IQ and personality traits assessed in childhood as predictors of drinking and smoking behaviour in middle-aged adults: A 24-year follow-up study. *Addiction* 96:1615–28. doi: [10.1080/09652140120080741](https://doi.org/10.1080/09652140120080741).
- Kuntsche E, Knibbe R, Gmel G, et al. (2006) Who drinks and why? A review of socio-demographic, personality, and contextual issues behind the drinking motives in young people. *Addict Behav* 31:1844–57. doi: [10.1016/j.addbeh.2005.12.028](https://doi.org/10.1016/j.addbeh.2005.12.028).
- Lange S, Probst C, Rehm J. (2020) Coronavirus disease 2019 crisis and intentional injuries: Now is not the time to erode alcohol control policies. *Can J Public Health* 111:466–8. doi: [10.17269/s41997-020-00391-6](https://doi.org/10.17269/s41997-020-00391-6).
- Lechner WV, Laurene KR, Patel S, et al. (2020) Changes in alcohol use as a function of psychological distress and social support following COVID-19 related university closings. *Addict Behav* 110:106527. doi: [10.1016/j.addbeh.2020.106527](https://doi.org/10.1016/j.addbeh.2020.106527).
- Maslach C, Jackson SE, Leitner MP. (2018) *Maslach Burnout Inventory manual*, 4th edn. Menlo Park, CA: Mind Garden.
- McHugh RK, Weiss RD. (2019) Alcohol use disorder and depressive disorders. *Alcohol Res* 40 arcr.v40.1.01. doi: [10.35946/arcr.v40.1.01](https://doi.org/10.35946/arcr.v40.1.01).
- Mood C. (2020) Logistic regression: Why we cannot do what we think we can do, and what we can do about it. *Eur Sociol Rev* 26:67–82. doi: [10.1093/esr/jcp006](https://doi.org/10.1093/esr/jcp006).
- NANOS Research. (2020) *COVID-19 and increased alcohol consumption: NANOS poll summary report*. Ottawa ON, Canada: Canadian Centre on Substance Use and Addiction. <https://www.ccsa.ca/covid-19-and-increase-d-alcohol-consumption-nanos-poll-summary-report>
- Neill E, Meyer D, Toh WL, et al. (2020) Alcohol use in Australia during the early days of the COVID-19 pandemic: Initial results from the COLLATE project. Advance Online Publication [published online ahead of print, 2020 Jun 29]. *Psychiatry Clin Neurosci* 74:10. doi: [10.1111/pcn.13099](https://doi.org/10.1111/pcn.13099).
- Neufeld M, Lachenmeier DW, Ferreira-Borges C, et al. (2020) Is alcohol an “essential good” during COVID-19? Yes, but only as a disinfectant! *Alcohol Clin Exp Res* 44:1096–9. doi: [10.1111/acer.14417](https://doi.org/10.1111/acer.14417).
- Nielsen MB, Gjerstad J, Frone MR. (2018) Alcohol use and psychosocial stressors in the Norwegian workforce. *Subst Use Misuse* 53:574–84. doi: [10.1080/10826084.2017.1349797](https://doi.org/10.1080/10826084.2017.1349797).
- Oksa R, Savela N, Kaakinen M, et al. (2020) Professional social media usage: Work engagement perspective. *New Media Soc, Advance Online Publication*. doi: [10.1177/1461444820921938](https://doi.org/10.1177/1461444820921938).
- Oksanen A, Kaakinen M, Latikka R, et al. (2020a) Regulation and trust: 3-month follow-up study on COVID-19 mortality in 25 European countries. *JMIR Public Health Surveill* 6:e19218. doi: [10.2196/19218](https://doi.org/10.2196/19218).
- Oksanen A, Oksa R, Savela N, et al. (2020b) Cyberbullying victimization at work: Social media identity bubble approach. *Comput Hum Behav* 109. doi: [10.1016/j.chb.2020.106363](https://doi.org/10.1016/j.chb.2020.106363).
- Panagiotidis P, Rantis K, Holeva V, et al. (2020a) Changes in alcohol use habits in the general population during the Covid-19 lockdown in Greece. *Alcohol Alcohol* 55:702–4. doi: [10.1093/alcalc/aga092](https://doi.org/10.1093/alcalc/aga092).
- Park JE, Hong JP, Jeon HJ, et al. (2020) Age-related differences in the associations among at-risk drinking, alcohol use disorder, and psychological distress across the adult lifespan: A nationwide representative study in South Korea. *Soc Psychiatry Psychiatr Epidemiol* 55:1335–44. doi: [10.1007/s00127-020-01845-5](https://doi.org/10.1007/s00127-020-01845-5).
- Pedersen AF, Sørensen JK, Bruun NH, et al. (2016) Risky alcohol use in Danish physicians: Associated with alexithymia and burnout? *Drug Alcohol Depend* 160:119–26. doi: [10.1016/j.drugalcdep.2015.12.038](https://doi.org/10.1016/j.drugalcdep.2015.12.038).
- Pejtersen JH, Kristensen TS, Borg V, et al. (2010) The second version of the Copenhagen psychosocial questionnaire. *Scand J Public Health* 38:8–24. doi: [10.1177/1403494809349858](https://doi.org/10.1177/1403494809349858).
- Pelucchi C, Tramacere I, Boffetta P, et al. (2011) Alcohol consumption and cancer risk. *Nutr Cancer* 63:983–90. doi: [10.1080/01635581.2011.596642](https://doi.org/10.1080/01635581.2011.596642).
- Sæther SMM, Knapstad M, Askeland KG, et al. (2019) Alcohol consumption, life satisfaction and mental health among Norwegian college and university students. *Addict Behav Rep* 10:100216. doi: [10.1016/j.abrep.2019.100216](https://doi.org/10.1016/j.abrep.2019.100216).
- Stewart SH, Loughlin HL, Rhyno E. (2001) Internal drinking motives mediate personality domain — Drinking relations in young adults. *Pers Individ Differ* 30:271–86. doi: [10.1016/S0191-8869\(00\)00044-1](https://doi.org/10.1016/S0191-8869(00)00044-1).
- Rajkumar RP. (2020) COVID-19 and mental health: A review of the existing literature. *Asian J Psychiatr* 52:102066. doi: [10.1016/j.ajp.2020.102066](https://doi.org/10.1016/j.ajp.2020.102066).

- Rehm J, Kilian C, Ferreira-Borges C, *et al.* (2020) Alcohol use in times of the COVID 19: Implications for monitoring and policy. *Drug Alcohol Rev* 39:301–4. doi: [10.1111/dar.13074](https://doi.org/10.1111/dar.13074).
- Richman JA, Rospenda KM, Nawyn SJ, *et al.* (1999) Sexual harassment and generalized workplace abuse among university employees: Prevalence and mental health correlates. *Am J Public Health* 89:358–63. doi: [10.2105/ajph.89.3.358](https://doi.org/10.2105/ajph.89.3.358).
- Rodriguez LM, Litt DM, Stewart SH. (2020) Drinking to cope with the pandemic: The unique associations of COVID-19-related perceived threat and psychological distress to drinking behaviors in American men and women. *Addict Behav* 110:106532. doi: [10.1016/j.addbeh.2020.106532](https://doi.org/10.1016/j.addbeh.2020.106532).
- Rospenda KM, Richman JA, Shannon CA. (2009) Prevalence and mental health correlates of harassment and discrimination in the workplace: Results from a national study. *J Interpers Violence* 24:819–43. doi: [10.1177/0886260508317182](https://doi.org/10.1177/0886260508317182).
- Schutte N, Toppinen S, Kalimo R, *et al.* (2010) The factorial validity of the Maslach burnout inventory – General survey (MBI-GS) across occupational groups and nations. *J Occup Organ Psychol* 73:53–66. doi: [10.1348/096317900166877](https://doi.org/10.1348/096317900166877).
- Slade T, Chapman C, Swift W, *et al.* (2016) Birth cohort trends in the global epidemiology of alcohol use and alcohol-related harms in men and women: Systematic review and meta-regression. *BMJ Open* 6:e011827. doi: [10.1136/bmjopen-2016-011827](https://doi.org/10.1136/bmjopen-2016-011827).
- Snyman R, Loh JM. (2015) Cyberbullying at work: The mediating role of optimism between cyberbullying and job outcomes. *Comput Hum Behav* 53:161–8. doi: [10.1016/j.chb.2015.06.050](https://doi.org/10.1016/j.chb.2015.06.050).
- Specht J, Egloff B, Schmukle SC. (2011) Stability and change of personality across the life course: The impact of age and major life events on mean-level and rank-order stability of the big five. *J Pers Soc Psychol* 101:862–82. doi: [10.1037/a0024950](https://doi.org/10.1037/a0024950).
- Testino G. (2020) Are patients with alcohol use disorders at increased risk for Covid-19 infection? *Alcohol Alcohol* 55:344–6.
- Vartia MA. (2001) Consequences of workplace bullying with respect to the well-being of its targets and the observers of bullying. *Scand J Work Environ Health* 27:63–9. doi: [10.5271/sjweh.588](https://doi.org/10.5271/sjweh.588).
- World Health Organization. (2018) *Global status report on alcohol and health 2018*. https://www.who.int/substance_abuse/publications/global_alcohol_report/gsr_2018/en/ (18 August 2020, date last accessed).
- World Health Organization. (2020). *Alcohol does not protect against COVID-19; access should be restricted during lockdown*. <https://www.euro.who.int/en/health-topics/disease-prevention/alcohol-use/news/news/2020/04/alcohol-does-not-protect-against-covid-19-access-should-be-restricted-during-lockdown> (18 August 2020, date last accessed).
- Wu P, Fang Y, Guan Z, *et al.* (2009) The psychological impact of the SARS epidemic on hospital employees in China: Exposure, risk perception, and altruistic acceptance of risk. *Can J Psychiatr* 54:302–11. doi: [10.1177/070674370905400504](https://doi.org/10.1177/070674370905400504).
- Zajenkowski M, Jonason PK, Leniarska M, *et al.* (2020) Who complies with the restrictions to reduce the spread of COVID-19?: Personality and perceptions of the COVID-19 situation. *Pers Individ Differ* 166:110199. doi: [10.1016/j.paid.2020.110199](https://doi.org/10.1016/j.paid.2020.110199).